

### Abstract

Transmission signals in a transport network are multiplexed from traffic streams respectively representing paths. Each path is identified with a path tag and forwarding information is provided in each network element. Failed paths in the network are restored in that the source network element crossconnects the affected traffic stream to an alternate output port and subsequent network elements receiving this unexpected traffic stream at an input port check the received path tag, determine an appropriate output port based on the tag and the forwarding information, and establish an internal cross-connection between the input port and corresponding output port.